



Atty. Dkt. No. 029319-0201

**THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Jay A. Haines

Title: INFRARED REFLECTIVE WALL  
PAINT

Appl. No.: 10/811,065

Filing Date: 3/26/2004

Examiner: Alain Bashore

Art Unit: 1762

Conf. No.: 8080

<p align="center"><b>CERTIFICATE OF MAILING</b></p> <p>I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below.</p> <p>_____ (Printed Name)</p> <p>_____ (Signature)</p> <p>_____ (Date of Deposit)</p>
---

**DECLARATION OF ANDRÉ DESJARLAIS UNDER 37 CFR 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, André Desjarlais, hereby declare as follows:

1. I hold the degree of B.S. in aeronautics from Boston University, conferred in 1973, and I have completed substantial coursework towards an M.S. at the Massachusetts Institute of Technology.
2. From 1975 until 1991, I was employed by the Dynatec company where my responsibilities focused on energy study consulting.
3. I am currently employed by the Oak Ridge National Laboratory of the United States Department of Energy in the position of Program Manager of the Building Envelope Group, which position I have held since 1991.
4. I am an expert in the field of architectural energy conservation by virtue of my training and professional research experience.

5. My laboratory engaged in a cooperative research project with Textured Coatings of America, Inc. in 2004 and 2005 to compare by actual field test the thermal performance of walls coated with Cool Wall (i.e., high infrared reflectance) as compared with standard colors, using Textured Coatings of America's Supercote Platinum and Supercote products. The term "standard colors" refers to paint which is not categorized as highly infrared reflective.

6. The results of that research,, entitled "Field Tests of Cool Walls in Cooling and Mixed Climates," are summarized in Exhibit 1 provided herewith. The project involved monitoring inside and outside temperatures and solar radiation levels of homes in various climates, and then using these data to make refined computer model simulations of the cooling costs associated with each site.

7. To summarize the results of this project, Exhibit 1 at page 47 provides the annual electricity burden for cooling the buildings of the model. The savings in energy to cool homes coated with infrared reflecting versus standard paint varied from 4-21.9%. The study concluded that using infrared reflective paint on the outside walls of homes results in a substantial increase in efficiency, relative to using paint which is not infrared reflective.

8. To reiterate, I was surprised at the magnitude of the savings afforded by the method of painting the exterior vertical walls of the test buildings with infrared reflective paint. In order to provide historical perspective to this study described in Exhibit 1, it must be understood that at the beginning of the cooperative research project (i.e., 2004) the collective wisdom in the field of architectural energy conservation dictated that the most efficient use of infrared-reflective paint would be on roofs. The idea was discounted in the professional wisdom that simply coating the exterior vertical walls of a building with an infrared-reflective paint could result in the significant energy savings which my group observed in the project summarized in Exhibit 1. The reason for the professional skepticism, and the resultant lack of research into exterior vertical wall infrared reflectance, is that the roof typically takes the majority of solar radiation impinging on a building. Prior to my laboratory's cooperative research project with Textured Coatings of America, Inc., I am not aware of any other work whatsoever directed to energy savings through heat-reflective

exterior vertical wall coatings. Thus, virtually all infrared-reflective coating research in the time period of 2004 was focused on roof coatings. I personally organized a seminar on the advantages of cool (i.e., heat reflective) roofing at the annual meeting of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, held in Anaheim, CA, January 24-27, 2004.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the captioned patent application or any patent issued therefrom.

Respectfully submitted,

Date

10 Dec 06

A handwritten signature in cursive script, appearing to read "André Desjarlais", written over a horizontal line.

André Desjarlais

**Exhibit 1: Field Tests of Cool Walls in Cooling and Mixed Climates, André Desjarlais,  
Progress Report on Joint Research Project, Textured Coatings of America and the Oak  
Ridge National Laboratory, 28 October 2005**